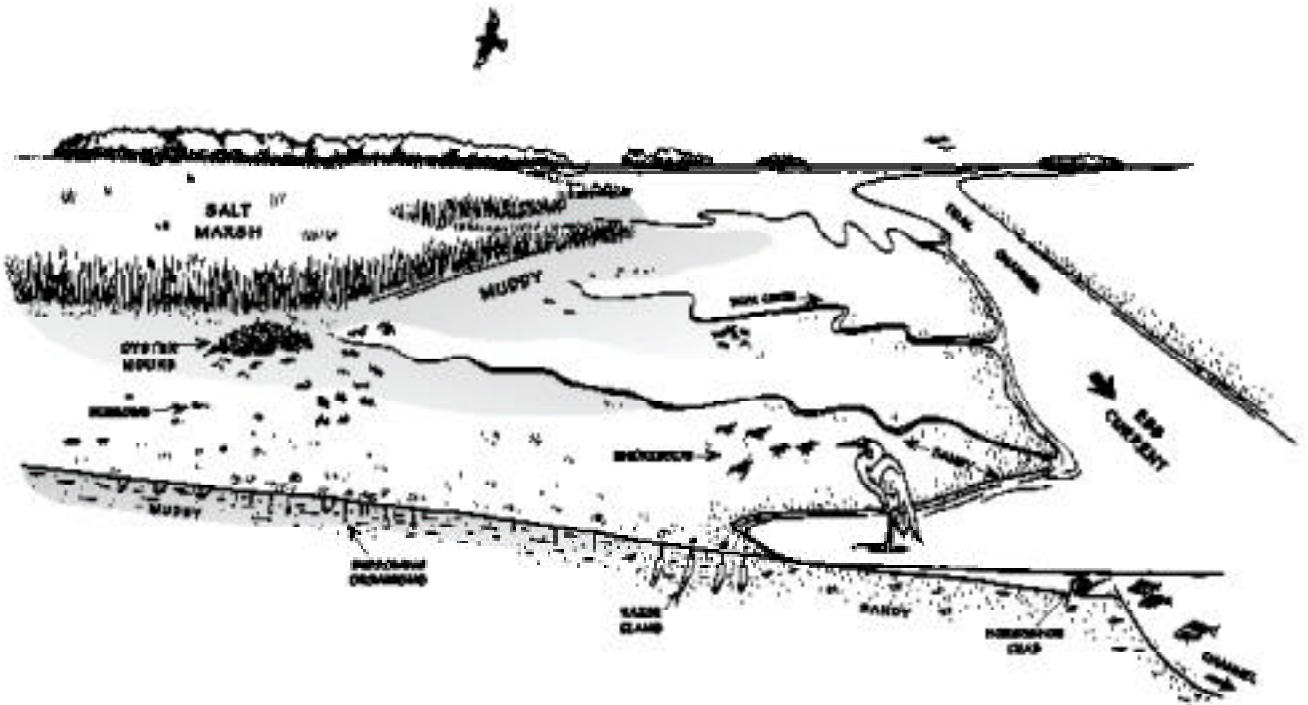
# Sheltered Tidal Flats



# Sheltered Tidal Flats



## Description

- Sheltered tidal flats are composed primarily of mud with minor amounts of sand and shell.
- They are usually present in calm-water habitats, sheltered from major wave activity, and backed by marshes.
- The sediments are very soft and cannot support even light foot traffic in many areas.
- There can be large concentrations of bivalves, worms, and other invertebrates in the sediments.
- They are heavily used by birds for feeding.

## Predicted Oil Behavior

- Oil does not usually adhere to the surface of sheltered tidal flats, but rather moves across the flat and accumulates at the high-tide line.
- Deposition of oil on the flat may occur on a falling tide if concentrations are heavy.
- Oil will not penetrate the water-saturated sediments, but could penetrate burrows and desiccation cracks or other crevices in muddy sediments.
- In areas of high suspended sediment concentrations, the oil and sediments could mix, resulting in the deposition of contaminated sediments on the flats.
- Biological impacts may be severe.

## Response Considerations

- These are high-priority areas for protection since cleanup options are limited.
- Cleanup of the flat surface is very difficult because of the soft substrate; many methods may be restricted.
- Low-pressure flushing and deployment of sorbents from shallow-draft boats may be attempted.

# Sheltered Tidal Flats

**Oil Category Descriptions**

I – Gasoline products
II – Diesel-like products and light crudes
III – Medium grade crudes and intermediate products
IV – Heavy crudes and residual products
V – Non-floating oil products

**The following categories** are used to compare the relative environmental impact of each response method in the specific environment and habitat for each oil type. The codes in each table mean:

A = The least adverse habitat impact.
B = Some adverse habitat impact.
C = Significant adverse habitat impact.
D = The most adverse habitat impact.
I = Insufficient information - impact or effectiveness of the method could not be evaluated.
— = Not applicable.

| Response Method | Oil Category I | II | III | IV | V |
|---|---|---|---|---|---|
| Natural Recovery | A | A | B | B | B |
| Barriers/Berms | B | B | B | B | B |
| Manual Oil Removal/Cleaning | – | D | C | C | C |
| Mechanical Oil Removal | – | – | – | – | – |
| Sorbents | – | A | A | B | B |
| Vacuum | – | C | B | B | B |
| Debris Removal | – | B | B | B | B |
| Sediment Reworking/Tilling | – | – | – | – | – |
| Vegetation Cutting/Removal | – | – | D | D | D |
| Flooding (deluge) | – | B | B | B | C |
| Low-pressure, Ambient Water Flushing | – | C | C | D | D |
| High-pressure, Ambient Water Flushing | – | – | – | – | – |
| Low-pressure, Hot Water Flushing | – | – | – | – | – |
| High-pressure, Hot Water Flushing | – | – | – | – | – |
| Steam Cleaning | – | – | – | – | – |
| Sand Blasting | – | – | – | – | – |
| Solidifiers | – | C | C | – | – |
| Shoreline Cleaning Agents | – | – | – | – | – |
| Nutrient Enrichment | – | I | I | I | I |
| Natural Microbe Seeding | – | I | I | I | I |
| In-situ Burning | – | – | – | – | – |

Consult the *Environmental Considerations for Marine Oil Spill Response* document referenced on page 5 before using this table.